The primary task of this committee was to develop suggestions for a revised structure of, first and foremost, undergraduate education at IIT\(^1\), which is to integrate innovation, leadership and entrepreneurship as constitutional parts of any undergraduate program that is being offered at our university. A central idea is to *transform* IIT as a whole, by refocusing our education on "applied creativity". On a very high level we take this to mean that we are to envision a super-structure of an educational framework that embeds creativity, leadership and innovation as inseparable and integral parts of everything we do to educate our students. At a university-wide level, this type of structure is currently mainly constituted by IIT's [Core Curriculum Learning Goals](#) and encoded in its [General Education Requirements](#). As a corollary to this, beyond structures, our committee was also tasked to suggest possible novel forms of education. However, since implementation of such innovative forms of teaching and learning rests with the academic units, our suggestions on this topic below are strictly to be taken as such, and meant as food for thought.

The primary action item for this group was therefore to present a set of tasks, to be taken on by existing or newly formed "task forces" at IIT that will be charged with developing the topics described in more detail below to the point of implementation. Initiation and formation of these task forces will be directed by the Provost. The following is a first draft of a framework for such a set of tasks. This does not claim completeness, nor does it claim inevitability. There may be essential topics that are missing, and some of the items below may end up being considered non-essential. We also note that some of the tasks below are already being worked on. For example, this is the case for the IPRO program revision which is naturally headed by Jeremy Alexis, or some of the entrepreneurship-related work that Nik Rokop is leading. We nevertheless include these in the list below due to their intimate relationship with the Kaplan Institute programming, including the fact that the impending availability of this facility may lead to, or has already led to changes in focus and/or emphasis of these existing efforts.

The tasks our committee has developed will be split into three tracks below pertaining to, the structure of undergraduate education at IIT, novel forms of teaching and learning, and elements of a support structure we feel needs to be put in place in order to move IIT forward towards the goals expressed here.

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\(^1\) There was some discussion of also considering graduate programs to be modified or newly developed in connection with the Kaplan Institute. While it is clear that beneficial synergies could emerge from ties between graduate programs and the Kaplan Institute, this committee has decided to defer this topic to a later time.
Structure of Undergraduate Education at IIT

Revision of Core Curriculum

We need to update IIT's Core Curriculum by revising our General Education Requirements with the goal of a tight integration of creativity, innovation, and entrepreneurship. As currently stated, our General Education Requirements comprise the following elements:

1. Writing and Communications
2. Mathematics
3. Computer Science
4. Humanities and Social Sciences
5. Natural Science and Engineering
6. Introduction to the Profession
7. Interprofessional Projects

We propose to establish and define an "Applied Creativity" track embedded in the requirements. This means that we leave open the option of either implementing such a track as a straightforward addition to the above seven, or merge Applied Creativity with one of the existing requirements. As one option, IIT's Undergraduate Studies Committee could be tasked with developing and implementing the details of this change. As part of their work, the Undergraduate Studies Committee would then also task all programs to identify or develop courses that touch upon innovation and entrepreneurship, and that can be associated with the Applied Creativity requirement. However, given the scope of this project, the UGSC may not provide the most effective mechanism for identifying the possible changes and curriculum options, and the Provost may decide to institute a separate committee for this task.

In addition to Applied Creativity, other possible elements that may be implemented as requirements, or required courses or experiences are:

- Innovation & Entrepreneurship
- Leadership and social/group work skills
- Multi-disciplinary work

We note that, with the exception of Entrepreneurship, these are already embedded in IIT's IPRO program in an implicit form. Simply making them explicit in a restatement of the Interprofessional Projects requirement may thus be sufficient. Similarly, one may consider Leadership and Entrepreneurship as integral parts of an Applied Creativity requirement rather than separate ones. The IIT Leadership Academy has steadily been expanding its programming and external outreach to the greater Chicago leadership community. IIT, through its Leadership Academy, has developed a unique and valuable undergraduate experience to assist students in discovering and developing their leadership abilities. While a unique part of their education, the experiences also assist in accelerating their careers.

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2 There is already a list of Entrepreneurship-related Courses and Programs at IIT 2010-2012, and each college recently supplied a similar list to the EA Council. This material is available in a Google Drive folder.
Outreach Programs Tied to Undergraduate Education

We suggest that IIT develop new, and/or revise existing outreach programs that facilitate various forms of collaboration and create interfaces with the community of entrepreneurs, startups and innovators. Elements of this effort should include:

- The use and integration of existing structures in IIT Corporate Relations and the School of Applied Technology as well as the Alumni Relations office.
- Development of relationships of the corporate community with the Institute
  o Sponsorship of research by corporations and an effective framework for handling IP issues
  o Incubator space for companies *that are driving innovation created at IIT*
  o Grant fund for prototype building/market validation
  o Investment fund for student companies
  o Early stage fund for companies spinning out innovative research and ideas
- Creation of a pathway from school projects to entrepreneurship
  o Fundamentals of assembling a team capable of transforming ideas into products
  o Best practices for creating and capturing value in intellectual property
  o Best practices to formulate strong founder teams (define founder relationships and hold non-performing parties responsible)

We feel that the development of outreach programs as outlined above should be spearheaded by a newly formed committee, which could be led by representatives of the Knapp Center, the Business School, Chicago-Kent, and the School of Applied Technology. We feel that it will be crucial to engage IIT's Trustees in this effort, in order to obtain valuable input and direction so as to match this effort of IIT's with outside interest and demand from the innovator and entrepreneurial communities.
Novel Forms of Teaching and Learning

Below are a number of more specific suggestions for types of courses or programs that can support the overall mission of IIT’s Kaplan Institute. As mentioned in the introduction, some of these may currently exist in a more or less prototypical form, and work on implementing others has already started at the time of this report.

• Revise IPRO Program
  o Update name of the program (with IIT's Marketing and Communications team)
  o Assess and revise IPRO structure to align with revised undergraduate curriculum
  o Program for Space Usage (→ input Shepley Bulfinch)
    ▪ Idea Shop
    ▪ group meeting spaces
    ▪ exhibit spaces
    ▪ "war rooms"

• Develop programs for each curriculum year that link all leadership and professional development efforts.

• Consider creation of "Design and Consulting Studios" for undergraduate students. These entities represent an extension of the idea of the student consulting groups/clubs that exist at a number of business schools in the nation. In the US there are only very few examples of student-led consulting groups that focus on design and engineering, with the University of Michigan's MECC as one example. We note, however, that such studios have seen significant growth, and popularity, in some European countries, such as Germany (Germany has a national organization called the Bundesverband Deutscher Studentischer Unternehmensberatungen —the Federal Organization of German Student Enterprise Consultant Offices, an example of a member is the "Studentisches Ingenieurbüro" at the University of Hannover).
  o Undergraduates participate on a voluntary basis
  o Studios could be themed: Electronics, Mechanics, Fluid Power, Web Design, etc.
  o Studios would have some (semi-) permanent space in Innovation Center building

• Create summer programs for Innovation Center
  o High-school students
  o Students from other universities and local community colleges

• Develop a mandatory university-wide colloquium for student credit
  o Invite exciting innovators/creators in all fields
  o The colloquium could be open to a wider community

• Develop an introductory "Design Thinking" course, combining methods from IIT's Institute of Design and College of Architecture

• The Stuart School, through its Center for Strategic Competitiveness, is interested in developing a unique leadership, decision-making, and interpersonal communication program using techniques drawn from the dramatics arts.

• Develop and offer massive open online courses (MOOCs) for selected and suitable classes.
Supporting Structures

In this section we describe some elements of a support structure which needs to be put in place in order to move IIT forward towards the goals given by the mission statement of its Kaplan Institute.

- Develop targeted faculty development opportunities
  - Develop specific new faculty incentives (awards, grants, "internal sabbaticals", etc.)
  - Create "educational innovation fund" (see UW Madison site)
  - Develop ideas for faculty retreats focused on collaborative projects, collaborative courses, educational activities associated with the Kaplan Institute
- Develop specific new student incentives (awards & prizes for IPROs, design studios, etc.)
- Create a permanent web presence for the Kaplan Institute
- Research possible NSF grants:
  - Engineering and Systems Design (ESD) [link]
  - Undergraduate Education (DUE) [link]
  - Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (TUES) [link]
- Have IIT students develop a portfolio similar to what Armour Themes students have.